

SUPPORT FOR THE AMENDMENTS

This Amendment amends Claims 1, 7, 15 and 20; and adds new Claims 26-38.

Support for the amendments is found in the specification and claims as originally filed. In particular, support for Claims 1, 7, 15 and 20 is found in the specification at least at page 6, lines 4-5 ("Ti (Titanium) content is in the range from 0.15-0.3%"). Support for new Claims 26-30 is found in Claims 15-19, respectively. Support for new Claims 31-36 is found in Claims 1-6, respectively, and in the specification at least at page 5, lines 10-11 ("The preferred range [of Mg] is in the range of being equal to or less than 0.1%"), and page 6, lines 4-5. Support for new Claims 37-38 is found in Claims 2-3. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-38 will be pending in this application. Claims 1, 15, 26 and 31 are independent. Claims 7-14 and 20-25 are withdrawn from consideration pursuant to a Restriction Requirement.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

The present invention is directed to a piston made of aluminum cast alloy having improved thermo-mechanical fatigue resistance.

Claims 1-6 and 15-19 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,434,014 ("Smith") in view of "Aluminum standards and data 2003" page 1-6 or "ASM Casting" pages 743-760.

Smith discloses high strength wear resistant aluminum alloys containing 0.01-0.1 wt% Ti. Smith at title; abstract.

However, Smith fails to suggest the limitation of independent Claims 1 and 15 of an aluminum cast alloy that comprises "Ti (Titanium): 0.15-0.3 mass%". As disclosed in the specification at page 6, lines 5-7, "[w]hen the range is equal to or more than 0.15%, since the structure is homogenized by making crystal grain fine, the fatigue strength is enhanced." In other words, Smith directly discloses not to use a Ti mass% of 0.15 or greater, exactly opposite to the presently claimed alloy.

The secondary references fail to remedy the deficiencies of Smith. The secondary references are cited for disclosing the structure modifiers P and Ca. Office Action at page 3, lines 5-6.

Since there is no prior art cited that discloses a Ti mass% of 0.15 or greater, the rejection should be withdrawn.

New Claims 26-37 are also patentably distinguishable over the cited prior art, because the cited prior art fails to suggest the limitation of independent Claims 26 and 31 that the aluminum cast alloy comprises "Ti (Titanium): 0.15-0.3 mass%". Furthermore, Smith fails to suggest the independent Claim 31 feature of reducing Mg as much as possible, which improves thermo-mechanical fatigue resistance. See, e.g., specification at page 5, lines 3-18.

Pursuant to M.P.E.P. § 821.04, after independent product Claims 1 and 15 are allowed, Applicants respectfully request rejoinder, examination and allowance of withdrawn method Claims 7-14 and 20-25, which include all of the limitations of product Claims 1 and 15, respectively.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Application No. 10/620,388
Reply to Office Action of August 9, 2005

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Corwin P. Umbach, Ph.D.
Registration No. 40,211

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)